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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,504	11/27/2001	Hiroo Matsunaga	Q65011	8148
7590	04/07/2004			
EXAMINER				
MAKI, STEVEN D				
ART UNIT	PAPER NUMBER			
	1733			

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/993,504	MATSUNAGA ET AL.
	Examiner Steven D. Maki	Art Unit 1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 January 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10-6-03.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

- 1) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 2) Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the scope of "two or more sub-rings of a side portion ring constituting the vulcanization mold" (emphasis added). In particular, it is unclear if the above noted language excludes a mold having a tread ring and/or bead ring. In claim 1 line 7, it is suggested to change "constituting the" to --of the--.

Claim 4 describes the venting gap of amended claim 2 as being in at least one of three specified positions. It is unclear if the description in claim 4 of the venting gap of claim 2 being located at a position corresponding to an outer end of a bead filler in a radial direction or the description of the venting gap of claim 2 being located at a position corresponding to a neighborhood of a side edge of a tread portion removes the requirement in claim 2 of the "venting gap formed between two or more sub-rings of a side portion ring".

In claim 7, it is unclear if the same or additional sub ring(s) are being described. In claim 7 line 2, it is suggested to insert --the-- before "sub-rings".

In claim 8, it is unclear if the same or additional sub ring(s) are being described. In claim 8 line 2, it is suggested to insert --the-- before "sub-rings".

In claim 11, it is unclear if the tire is in the mold in the claimed process. In view of the amended language in claim 1, it is suggested to insert --received with an uncured product of the pneumatic tire-- after "venting a gas in the vulcanization mold" on line 4.

In claim 11, there is no antecedent basis for "the side portion ring" and "the venting gaps" and as such, the scope of the mold is unclear and the relationship, if any, between the step of "venting a gas" and "the venting gaps" is unclear. In claim 11, the following changes are suggested: (1) on line 5 after "sidewall portion" insert --from a venting gap formed between two or more sub-rings of a side portion ring of the vulcanization mold--; (2) on line 7, change "the venting gaps are formed among plural sub-rings" to --the sub-rings are--; and (3) on line 8 delete --so as to constitute the side portion ring--.

- 3) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- 4) Claims 4 and 11-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 4, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new

matter) is the combination of (1) the subject matter in amended claim 2 of "venting gap formed between two or more sub-rings of a side portion ring" and (2) the subject matter in claim 4 of the venting gap being located at a position corresponding to an outer end of a bead filler in a radial direction or the subject matter in claim 4 of the venting gap being located at a position corresponding to a neighborhood of a side edge of a tread portion. In figure 1 of the original disclosure, the position corresponding to an outer end of a bead filler in a radial direction is between a sub-ring and a bead portion ring instead of between two sub-rings. Also, figure 1 shows the position corresponding to a neighborhood of a side edge of a tread portion as being between a sub-ring and a tread ring instead of between two sub-rings.

In claims 11 and 12, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is the omission of the subject matter of the venting gap extending over a full circumference of the side portion ring from the claimed subject matter of "sub-rings placed inward and outward in the radial direction ... and opposed surfaces of the mutual sub-rings are slant faces inclining with respect to the radial direction, and at least one sub-ring among these sub-rings is energized by a spring or the like so as to enlarge the venting gap". The use of springs to enlarge the venting gaps 22, 22 is shown in figure 7. The venting gaps 22 in figure 7 are full circumference venting gaps. The original disclosure fails to disclose using a venting gap 22 which does not extend over a full circumference of the side portion ring. The original

disclosure provides no guidance as to how springs 25, 25 would enlarge the venting gaps 22, 22 if the venting gaps 22 fail to extend over the full circumference of the side portion ring.

In order to overcome this 112 first paragraph rejection, it is suggested to make the following change: In claim 11 line 6 after "the tire," insert --the venting gap extending over a full circumference of the side portion ring and passing through the side portion ring from the inside toward the outside thereof--. Proper antecedent basis for "the venting gap" may be provided by adopting the suggestions for overcoming the 112 second paragraph rejection set forth in paragraph 2 of this office action.

5) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Ladouce

7) **Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ladouce (US 5798076).**

Ladouce discloses vulcanizing a tire having sidewalls in a mold comprising sector 4, a side support 10 and spirally wound strip 20. At col. 3 lines 1-5, Ladouce teaches

forming a clearance J (figure 3) between the convolutions of the strip 20 sufficient to assure a perfect venting at all points of the side shell 1 of the mold. In figure 1, Ladouce illustrates the tire as being a pneumatic tire. The claimed sidewall portions, bead portions and tread portion are inherent in Ladouce's tire. In any event: It would have been obvious to one of ordinary skill in the art to provide the tire with sidewall portions, bead portions and tread portion since a tire having sidewall portions, bead portions and tread portion is taken as a well known / conventional type of tire in the tire art.

As to the venting gap being formed between two or more sub-rings of a side ring portion, Ladouce teaches that hoops of different diameters can be used as an alternative to the spirally wound strip. See col. 3 lines 28-30. The sub-rings read on the hoops.

Christof

8) **Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christof (US 5141424) in view of Ladouce (US 5798076) and optionally Youngblood et al (US 3467989) or Japan '929 (JP 8-47929).**

Christof discloses a vulcanization mold comprising side portion rings, bead portion rings and a tread ring comprising segments (a series of sectors 30). See figure 1. Also, Christof shows the side portion ring and bead portion ring as being " integrally united". See illustration of bolts in figure 1.

As to claims 1 and 2, it would have been obvious to one of ordinary skill in the art to provide Christof's tire mold with the claimed venting gap which extends over a full circumference of the side portion ring such that the venting gap is formed between two

or more sub-rings of a side ring portion in view of (a) Ladouce's suggestion to form a continuous circumferentially extending clearance J (between adjacent convolutions of a strip 20 or between hoops of different diameter) to assure venting and thereby prevent a molding defect caused by imprisoned air between the tire and optionally (b) Youngblood et al's suggestion to form a continuous circumferential groove at the junction between a side portion 2a, 2b and a bead portion 6a, 6b of a tire mold to prevent gas from being trapped between the tire and the inner mold surface or Japan '929's suggestion to shape the inner side of a tire mold so as to define a pair of circumferentially extending depressions connected to vent holes 12, 13 (see figure 2) to smoothly discharge air existing between the tire and the mold and thereby avoid a rubber deficit requiring discarding of the tire (see machine translation). Hence: Christof disclose the basic structure of the claimed mold. Although Christof does not recite a venting gap, the secondary art to Ladouce and the optional Youngblood or Japan '929 provide ample motivation to provide the tire mold of Christof with a venting gap to prevent the art recognized problem of trapped air between the tire and the mold - only the expected results (prevention of defective molded tires) being obtained. The claimed venting gap reads on the clearance J suggested by Ladouce. Claim 2 reads on and fails to exclude using vent holes to communicate the venting gap to the outside of the mold. As to Youngblood et al, it is emphasized that Youngblood et al recognizes that the use of circumferential venting grooves permits elimination of hundreds of vent holes. This benefit corresponds to applicant's disclosed benefit at specification page 2 lines 28-29.

As to claim 1, the claimed sidewall portions, bead portions and tread portion are inherent in Christof's tire. In any event: It would have been obvious to one of ordinary skill in the art to provide the tire with sidewall portions, bead portions and tread portion since a tire having sidewall portions, bead portions and tread portion is taken as a well known / conventional type of tire in the tire art.

As to the dependent claims: As to claims 3 and 4, the claimed position of the venting gap would have been obvious in view of the various locations for venting suggested by Ladouce and optionally Youngblood or Japan '929. As to tire structure described in 3 and 4, a pneumatic tire having a "bead guard" and a turnup end is taken as well known / conventional. As such, it would have been obvious to shape the inner surface of Christof's mold so that it can form such a well known / conventional tire so that the tire made using the mold advantageously has a bead guard. As to claim 5, the claimed clearance of 10-30 micrometers is suggested by Ladouce (at col. 3 line 7, Ladouce suggests a clearance of less than 0.03 mm (less than 30 micrometers)). As to claim 6, it would have been obvious to add the claimed fine grooves since Youngblood suggests further facilitating venting by using radially extending sidewall flutes 15 in communication with circumferential groove 9a. As to claim 7, note the suggestion from Youngblood et al to vent between a side portion 2a, 2b and a bead portion 6a, 6b of a tire mold and Christof's integrally united rings. As to claim 9, note Japan '929's suggestion to form the "circumferentially extending depressions" which are illustrated as being generally triangular in figure 1.

Allowable Subject Matter

9) **Claims 8 and 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.**

Claims 11 and 12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112 set forth in this Office action.

Although (1) Soulaliox (US 6017206) teaches using spring like means to separate elements 10 for forming a tread pattern to assure venting and (2) Carter (US 4492554) teaches venting a sidewall of a tire in a mold using discrete valve members 74 located in a passage having a diameter of 0.078 inches, retained in an open position by a spring, and movable to a closed position by expansion of a tire band, there is no motivation in the prior art of record to further modify Chistof's mold so as to satisfy the additional specific limitation as set forth in claims 8 and 11.

Remarks

10) Applicant's arguments filed 1-7-04 have been fully considered but they are not persuasive.

Applicant argues that in all of the cited references, the venting gap is merely arranged between the tread portion and the sidewall portion and /or between the sidewall portion and the bead portion. The examiner disagrees. In Ladouce, the venting is at the laminated assembly of lamelliform elements 20, which as can be seen from figure 1, is clearly at the sidewall region of the tire. In Japan '929, the circumferential venting gaps which communicate with vent holes 12, 13 is at a side

portion of the mold which as can be seen from figure 1 is clearly at a sidewall portion of the tire.

Applicant argues that the clearances in Ladouce do not extend over a full circumference of the tire side ring. Applicant is incorrect. The clearances J extend over the full circumference of the side ring as indicated by figures 3 and 4. The clearances J are located in each of the four quadrants defined by the vertical axis and horizontal axis. The clearances J are not confined, for example, to only the first (upper left) quadrant shown in figure 3.

Applicant comments that Ladouce indicates at the bottom of column 3 to the top of column 4 that one or more holes may be used to communicate with the outside. The holes described by Ladouce are for support 10 instead of the side portion ring defined by the assembly of lamelliform elements 20. As noted in the last office action, "Claim 2 reads on and fails to exclude using vent holes to communicate the venting gap to the outside of the mold". Stated differently, claim 2 fails to require the venting gap to extend across the full-width of a side ring portion, which is not covered by a support.

Applicant comments that Youngblood discloses a venting gap between a side ring and a bead ring. More properly, Youngblood discloses a venting gap extending the full circumference between two rings of the mold; applicant having provided no argument to the contrary.

Applicant's argument that Youngblood does not disclose a venting gap within the side ring is not persuasive since, as noted above, Ladouce discloses a venting gap within the side ring.

11) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
April 1, 2004

STEVEN D. MAKI
PRIMARY EXAMINER
-GROUP 1300-
AU 1733

4-1-04